FINDING OF NO SIGN
DEVILS HOLE

Death Valley N

March 2

INTRODUCTION

This Finding of No Significant Impact (FONSI) has
Death Valley National Park, in accordance with the
This document describes the selected alternative and
significant effects on the human environment. As sta
Assessment (EA), the proposed action refers to (1) t
fencing improvements, enclosure of the visitors plat
strategic locations around the site; (2) installation of
Devils Hole for research and monitoring activities; (
addition of a webcam onsite and other displays at th
of the disturbed areas.

Devils Hole is a 40-acre site located on lands within
(AMNWR) but managed as a detached unit of Deatl
of the site lies a cavepool, the collapsed top of a stre
which contains the single remaining population of a
(Cyprinodon diabolis). The Park manages the ongoi
collaboration with the U.S. Fish & Wildlife Service
(NDOW), and attempts to secure and enhance the re
support for protection of the habitat features on whic
the groundwater table at sufficiently high depth belo
and spawning activities of the fish.

PURPOSE AND NEED FOR FEDERAL ACTION

The purpose of the proposal is to redesign the man-r
that does no permanent harm to the species or its hal

- Provide the species and habitat with better protect
- Improve interpretive and educational opportunitie
- Enable safe and effective scientific research and e
- Restore the natural ecosystem processes upon whi

The need for federal action is based primarily on the
pupfish, composed as it is of a single small populati
individuals, the lowest on record, furthering a trend
spring count in April of 2009 was 70 (±13.5 SE), lik
surveys. The fragility of the population is due to a c
inherent to the Devils Hole site. Specifically, the De

habitat as
pupfish h
habitat o
decline a

Threats t
factors su
vandalisr
groundw
research
be better

Objectiv
ecologic
pupfish,
pressures
educatio
need for

RANGE

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improver
objective

Selected

For impl
changes

Fencelin
addition
Devils H
Existing
reuse els
boundar
angled t
existing
to the tra

This Tw
visitors t
high. D
fencing
Visitors'

installing posts every 8 feet using a
galvanized aluminum posts into nor

To further enhance drainage, a floo
the 'dogleg ' fenced area.

Visitors Platform, Access Trail & I
trail to the Visitors' Viewing Platfo
existing trail from the east perimete
the new Twinbar High Security fen
child viewing. The tunnel will be c
will be added to the existing trail, b
implemented as necessary for safet

The interpretive theme is based on
full-motion video cam located in th
Death Valley/Ash Meadows web si
featured in an interpretive display a
Park's Furnace Creek Visitor Cente
talking about the importance of De
major improvement of the Park's al

Access Ladder - The existing ad ho
to as a ships ladder. The existing su
Like the existing support, the new s
impede the natural drainage. New a
support's anchors are found to be i

Handrails would be required on bot
ladder would be fabricated offsite.
access to the Hole, a crane would b

Monitoring Platform & Equipment
monitoring platform that can be sto
and assembled as needed. The platf
approximately 40 lbs. The platform
researchers to easily georeference t

The entire stilling well and frame s
transducers and a new staff gauge (
measure water level.

Security System - One of the existi
full-motion video camera and the s
capability. To enhance remote mon
compositing software will be instal

monitoring screen. In addition, two video cameras that ca
the internet for site interpretation and resource monitorin
along the cliff and one on the cavern ceiling. A remote m
intrusion detection via intrusion sensors located at multip
fifth camera on the visitor platform or up the hillside wou
would be suspended from a cable and hung in the water a
video signal back to an electronics enclosure mounted rer

Communications Infrastructure - At least 640kbps of ups
optimize at 1MB or higher) for transmitting data and ima
interpretive sites. This would involve installing a small sa
cannot be installed on the communication tower, it would
Over 100' of fiber optic cables from the video controller
buried underground.

Power supply - Solar power will be used for all onsite pc
required for the cameras and monitors, plus excess power
approximately 300 square feet of photovoltaic cells. The
on the ground at a location west of the Hole, chosen to ba
maximize power efficiency, with the large storage batteri
the solar array.

Site revegetation - Much of the project area has been pre
vegetated. All revegetation work will be conducted under
consists of replicating the mix of plant species in the rest

Alternative B

Fenceline - For Alternative B the fence would consist of
with double angled tops (outriggers) and hardware, and o
of chainlink fence to enclose the natural drainage. Since t
Platform except with a ranger guided tour, the gate would
only to Park personnel. Construction of the fenceline wou

Visitors Platform, Access Trail, and Interpretation - In A
will remain. The existing fencing and gate underneath thi
trail to this platform would be retained and a wooden han
disturbance would be minimal.

The interpretive approach in Alternative B limits unsuper
improves interpretive displays outside the fenced area for
information about the pupfish, the ecosystem and the imp
supervised tours provide the opportunity to deliver a mor
addition, an offsite interpretive exhibit at the Ash Meado
Furnace Creek Visitor Center would be enhanced by pro

from a camera inside the
talking about the import

Access Ladder - Alterna
accessibility by adding a
the handrail continues d

Monitoring Platform &
structure bolted to the ea
operated pulley system v
position and bolted to th
temporary scaffolding o
vibration tests would be

The stilling well and ass
Installation in the new lo
stilling well frame. The
of the cave. There woul
easily accessible from th
platform cannot be fully
occupy the same space),
surface during removal

Security System - For A
would be refurbished to
infrared (IR) capability.
capability, although only
motion images to the Ra
communications tower v
along with improved int
would be installed, with
located at the Ranger Sta
northeast face of the clif
installed on the ceiling o
of the visitors to some ea
watershed edge, an addit
steering towards the upp

Communications Infrast
infrastructure for commu
communications.

Power Supply - Alternat
monitors. This would in
battery charging system

ground at the same location as the existing array, with the large storage batteries stored underneath (and thus shaded by) the solar array.

Site revegetation - Restoration in Alternative B would consist of accelerating the re-establishment of the natural mix of plant species.

ALTERNATIVES CONSIDERED BUT DISMISSED

During the scoping phase and in drafting the EA, the Park considered the following options and concepts, but dismissed them from further consideration as alternatives for the reasons given.

1) Bridge over the north side of Hole - Since one of the objectives is to improve the interpretative and educational opportunities for visitors, one option considered was constructing a bridge over the north side of the hole. This would orient visitors looking south over the hole and beyond, thereby giving them a broader view of the entire setting than a platform looking north. A separate interpretive area would be constructed adjacent to the bridge. Because of physical site limitations, this bridge would have to extend directly over the Hole itself. This was deemed infeasible because: (i) Such construction would be prohibitively expensive in relation to its benefits for the recovery of the pupfish; (ii) While providing a broader view of the setting and thereby providing additional educational opportunities for understanding the role of the site in the broader ecosystem, the actual views of the Hole itself would be limited except for directly underfoot, which is felt to be limiting for many visitors even if a glass floor were used for the bridge span; and (iii) It was felt that any alternative that allowed visitors unsupervised access inside the fencing should allow direct views of the Hole itself. Otherwise, there would be little benefit to allowing such access.

2) Extending grid power and landline telecommunications - Currently all activities at the site requiring power are served by a small solar array—3 solar panels, generating 37 watts, and a charge controller—located a few yards from the visitors platform. Data communications within and from the site are over cellular phone infrastructure. The proposed security and interpretive improvements will require additional power and data bandwidth.

One powering option considered by the Park team was to extend grid power from a terminus about 1.5 miles away, within AMNWR. Power would be extended by conventional utility lines to the site. This would require extending above-ground utility poles and lines from the terminus to the site. While this is technically possible, it was considered to be unnecessarily disruptive and costly, as well as requiring levels of interagency negotiation that could cause delays in the implementation, especially given the natural suitability of solar power for the Devils Hole site.

Similarly, telecommunications bandwidth for security and interpretive functions, using video, two-way voice, and internet, could be delivered by extending landlines from the AMNWR terminus. However, the Park team felt that similar considerations of cost, environmental disruption, and interagency delays make this option infeasible for this project, especially given the relative simplicity of a private satellite ISP system located at the site.

3) Joining the monitoring platform directly to the ladder - One of the options considered in designing secure and convenient access for researchers was improving convenience by constructing

a single structure t
The Park team fel
just beyond the sh
the ground and ov

4) Live video mon
proposed interpret
cameras scanning
interpretive statio
connections to the
daytime, the need
make this option p
creating additiona

5) Reconfiguratio
access for staff an
School Springs wi
this way, the exist
favor of a less sub
favor of a new pa
to Devils Hole, nc
additional distanc
be needed, causin
discussions with *A*
traffic and/or any

6) Building a new
for a new visitors
overall, while pre

6a) Elevated locat
expanded fencelir
while keeping the
onsite evaluations
surface would cre

6b) A location at t
supervised tours c
location when a b
and the potential f
considered infeasi

ENVIRONMENT

The environmentally preferred alternative is the course of action which will best promote t national environmental policy expressed in NEPA (Section 101(b)). This environmental pc stated in six goal statements, which include:

1. Fulfill the responsibilities of each generation as trustee of the environment for succeedin generations;
2. Assure for all Americans safe, healthful, productive, and esthetically and culturally plea surroundings;
3. Attain the widest range of beneficial uses of the environment without degradation, risk t and safety, or other undesirable and unintended consequences;
4. Preserve important historic, cultural, and natural aspects of our national heritage, and m wherever possible, an environment which supports diversity and variety of individual choi
5. Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
6. Enhance the quality of renewable resources and approach the maximum attainable recyc depletable resources (NEPA, 42 USC 4321-4347).

As described in the EA, the Park selected its Environmentally Preferred Alternative by compa natural and human impacts for each project component:

Fenceline—Alternative A expands the existing fenceline to include more but not all of the wa drains into Devils Hole, with a floodgate installed within the fence to allow natural sediment f reach Devils Hole. This "dogleg" fenceline would install less linear fencing, and thus require substantially less fencing material and construction disturbance than Alternative B, which exte fenceline to encompass the entire drainage area. The dogleg fenceline of Alternative A provid improved natural drainage to Devils Hole, but natural flows are still artificially constrained by Furthermore, releases through the floodgate concentrate flows along a relatively narrow chan increasing the flow rate and the probability of soil erosion. Alternative B would create more d during installation, but these impacts would be short-term, compared to the long-term benefits restoring fully natural drainage. Therefore, the fenceline in Alternative B is environmentally p

Visitors Platform, Access & Interpretation—Both alternatives retain the existing visitors platf remove the fencing below. Alternative A constructs an enclosed access trail and encloses the platform itself, thereby allowing more secure unsupervised use, and preventing off-trail distur Alternative B eliminates unsupervised access and adds supervised interpretive tours, thereby the need for enclosures around the trail and platform. The enclosure of the platform and trail Alternative A will cause more construction disturbance than Alternative B, as well as detract visitor experience and cultural integrity of the site by its intrusive visual presence. Both altern similarly improve the interpretation material onsite and at the Visitors Center, but supervised provide a further opportunity for visitor education. Therefore, the trail and interpretation of A provide a lighter footprint and greater opportunity for education; thus Alternative B is environ preferred for these components.

Access Ladder—The ships ladder in Alternative A would improve safety and convenience for researchers by a greater amount than the handrails in Alternative B. While Alternative A coul more disturbance during installation, the use of BMPs would minimize this, and the ladder wi researchers from disturbing the cliffside during all subsequent descents, as would still be nece

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Alternative

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DECISION

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impact analysis process, and made modifications and planned minimization activities to address tribal concerns, such that implementing the selected actions will not be highly controversial.

Degree to which the potential effects are highly uncertain or involve unique or unknown risks.
Generally, the potential impacts are well-defined and analyzed in the EA. The impacts of ground disturbance are well understood, and will be mitigated or minimized through the implementation of a series of measures identified in Appendix A. Many variables beyond the Park's control can influence survival and recovery of the Devils Hole pupfish, but it is certain that controlling or avoiding the risks to the pupfish's habitat and ecosystem from an insecure site is a necessary, if not sufficient, condition for their recovery. Beyond the pupfish's recovery, there are no other unique or unknown risks from the actions to be taken.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
The selected alternative does not establish precedent for any future actions that may have significant effects, nor does it represent decisions about future considerations. The NPS proposed these actions in accordance with the statutory mandate to protect the Park's natural resources, its General Management Plan objective to "preserve the...natural resources of these unique natural landscapes", and the Park's responsibility to implement the 1980 Recovery Plan for the endangered Devils Hole pupfish. Any future actions serving the same purposes as this one will be evaluated independently against the Park's overall objectives and constraints.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.
The EA considered the cumulative impacts of Alternative A with several past, present, and foreseeable future projects, and determined that implementation would result in minimal and not collectively significant cumulative effects.

Degree to which districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources may be adversely affected.
Devils Hole is believed to fit the definition of a Traditional Cultural Property, owing to its historic connection with the Timbisha Shoshone and Pahrump Paiute tribes. Additionally, both groups have identified the Ash Meadows area as a Traditional Cultural Landscape, with Devils Hole as one landmark within that larger landscape. As such, the Park has undertaken consultations with these tribes on the effects of the proposed action pursuant to Section 106 of the National Historic Preservation Act. The tribes are also allowed access to the property under The American Indian Religious Freedom Act of 1978.

Degree to which an endangered or threatened species or its critical habitat may adversely affected
This federal action was proposed for the specific purpose of aiding the recovery of a federally listed species, the Devils Hole pupfish. The Biological Assessment prepared for this proposal, and accompanying the EA, indicated the Park's determinations for the Devils Hole pupfish are: (1) "May affect, not likely to adversely affect"; and (2) there would be "No Effect" on any of the other species of concern in the Ash Meadows area. The U.S. Fish & Wildlife Service concurred in this conclusion in a letter dated May 16, 2009.

Whether the actions may violate Federal, state, or local environmental protection law. Implementing the selected alternative does not violate any federal, state or local environmental protection laws.

PUBLIC INVOLVEMENT

A public scoping letter describing the Proposed Action and requesting public input on the proposal was distributed to private parties, State, Federal, and local agencies in November, 2007. Two public meetings were held which drew a total of five participants. The main issues raised by participants were: (1) the importance of communicating the pupfish "story" and its significance to the public, while (2) minimizing the actual disturbance to the habitat itself that could be caused by attracting more visitors. The Park staff gathered specific suggestions for how off-site interpretation could be enhanced towards meeting both goals simultaneously. The external scoping period ended on December 26, 2007.

The Environmental Assessment was made available to interested parties from June 12 through August 12, 2009. Copies of the EA were distributed, and it was also made available at public libraries to enhance the availability of the EA. The opportunity for public review was announced through issuance of a press release and mailing of a "dear friends" letter.

Six letters were received from interested individuals, the Sierra Club Toiyabe Chapter, Nye County Nuclear Waste Repository Project Office and the Amargosa Volunteer Fire Department. The main issues raised through comments were: (1) accuracy of information pertaining to hydrologic connectivity, current pupfish counts, and related information, and (2) concerns regarding monitoring and research activities outside the scope of this assessment.

An Errata has been prepared documenting corrections needed in the EA, and includes a summary of and responses to comments received. However, none of the comments received altered any of the determinations about potential environmental consequences.

AGENCY CONSULTATION

U.S. Fish & Wildlife Service: The Park sent a Biological Assessment and a consultation request to U.S. Fish and Wildlife Service (FWS) on April 16, 2009. On May 18, 2009 FWS sent a reply concurring that, if the proposed action were carried out with the minimization measures identified in the Biological Assessment, it is not likely to adversely affect the Devils Hole pupfish (this reply concluded informal consultation).

Nevada State Historic Preservation Officer: The Park sent a letter to the Nevada State Historic Preservation Officer (SHPO) on March 27, notifying them of the details of the project. There will be no effect on cultural or archaeological sites; therefore no consultation with the SHPO was completed for this project.

Tribal Consults: In addition, the Park has had meetings and correspondence with two tribes with historic relationships to the Devils Hole site, the Timbisha Shoshone and Pahrump Piute tribes,

pursuant to §106 of
seq.; NHPA). As p
ongoing.

IMPAIRMENT DE

In addition to dism
implementation of
impairment of Dea
impacts to a resour
park's establishing
opportunities for e
plan or other releva
the foreseeable env
accompanying Bio
consultations, cons
decision-maker gu

CONCLUSION

Based upon the co
the EA, the capabil
with due considera
undertaken, the Pa
will have a signific
impacts that could
significant impacts
resources, or other
unique or unknow
identified. Implem
on the foregoing, i
be prepared. Impl

Recommended: _

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Approved: Pa

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acting

A
Mitigation and

Measures that would be implemented to mini
resources as a result of the alternatives are de

Minimizing vibration while drilling into rock
because of the proximity of sensitive fish to t
vibrations of approximately 2 inches per seco
per second per second in a 7000-lb. rock (No
the rocks by drilling a single hole into the roc
observing vibration. The largest rock sizes fe
to the hole. In addition, using the minimum si
minimize vibration. In addition, such hamme
minimize the deposition of shavings and sma

During project implementation, standard best
all phases of construction, rehabilitation, and
control or reduce potential adverse impacts fr
species propagation, vegetation removal, and
adverse affects from rock drilling in close pro
measures, other measures would be implemer
environmental resources as a result of the act
The NPS would implement these measures as
the following mitigation measures, in conjun
local, state, and federal regulations and permi
significant impacts to the environment.

Soil & Water Resources

- BMPs at construction sites typically cor
  silt fences, straw bales, soil moistenin
  portions of the site perimeter to contr
- These temporary erosion prevention me
  vegetation is firmly established and s
- Regular inspections of the erosion and s
  any storm event;
- The amount of vegetative clearing durir
  to protect the soil cover and minimize
- Under all circumstances, sediment runo
  entering any nearby surface or groun
- Care should be taken when working on
  avoid erosion of sediment and soils ir

- Project components
  incorporate the na
  extent possible;
- All fuels should be s
  potential for soil c
- To the extent possib
  minimize the flow
- A person(s) should b
  monitors the fueli
  absorbent material
  event of an accide
- The area of disturba
  be kept on the roa
  to the roadway, to
- Construction areas w
  some similar mate
  construction zone
  protection measur
  would be instructe
  delineated by the
  previously disturb
- Topsoil would be re
  construction is co
- Disturbed areas wou
  potential for erosi
  in the Park or fro
  Revegetation effo
  diversity of native
- Subsequent to proje
  invasive species o
- Construction vehicle
  pollutants to the a
  frequently to iden
  and only equipme
- Fuel and oil services
  from channels or
  tanks and on-site a
- Biological soil crust
  areas near but out
- Gravel and fill for c
  weed-free sources
  sources. There wo
  AMNWR.

Biological Resources

- During construction activities, NPS would
  ensure that activities are not adversely a
- Any area of undeveloped land would be re
  through soil stabilization BMPs and reve
- Approval would be obtained prior to the us
  that any fill/seed materials are certified v
- Construction activities would be timed to r
  Construction activities would not take pl
  between February and May.
- To the extent possible, construction activit
  when barn owls are nesting in the caver
  Townsend's big-eared bat (*Corynorhinu*
- All electrical equipment should be properl
- Crews will not work in storms
- Exposed wires will be kept as far away fro

Air Quality

- Implementation of reasonable measures, su
  stockpiles of dirt, would occur when wi
  fugitive dust emissions. Adhering to the
  emissions.

Cultural Resources

- If previously undiscovered archeological r
  in the immediate vicinity of the discove
  identified and documented, and an appro
  with the Nevada State Historic Preserva
  funerary objects, sacred objects, or obje
  construction, provisions outlined in the
  Act (25 United States Code §3001) of 1

Park Operations

- Any area with vegetation clearing or const
  requiring the use of hard hats.
- Others specific to protection of site-specific fe

Visitor Use and Experience, Visitor Safety, a

Measures designed to minimize visitor disrupti
Generally accepted methods to protect public h
experience include, but would not be limited to

- Notification to travelers about site closure
  Visitors Centers
- Well-tuned construction equipment with p
  would be performed during low visitati
  would occur during winter months whe

- The multiple environmental benefits of the proposed action would be explained to visitors to maximize public support and understanding. For example, there could be an interpretive display at the Ash Meadows Visitor Center and Death Valley's Furnace Creek Visitor Center emphasizing the fragility and importance of the Devils Hole pupfish and its surrounding ecosystem.

Any potential for vehicle traffic congestion around the site could be mitigated by the use of a slower speed limit (and accompanying signage).